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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,502	03/01/2004	Kanu G. Shah	60680-1843	1038

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RADER, FISHMAN & GRAUER PLLC
39533 WOODWARD AVENUE
SUITE 140
BLOOMFIELD HILLS, MI 48304-0610

EXAMINER	
BISSETT, MELANIE D	

ART UNIT	PAPER NUMBER
1711	

DATE MAILED: 11/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/790,502	SHAH ET AL.
	Examiner	Art Unit
	Melanie D. Bissett	1711

S.C

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 25-31 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 25-31 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 6/04.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 25 and 27-29 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 9 of U.S. Patent No. 6,730,363 B1. Although the conflicting claims are not identical, they are not patentably distinct from each other because pf substantial overlapping subject matter. Patented claim 1 recites all of the limitations of present claim 25, while also further limiting the coating composition. Because of the substantial overlapping subject matter, it is the examiner's position that the claims are not patentably distinct.

3. Regarding present claim 29, patented claim 9 is drawn to an insulated fuel cell plate comprising a plate and a coating precursor, where the precursor includes epoxy and acrylonitrile components. However, the claim is not drawn to a cured coating and does not specify a gas impermeable plate. Patented claim 1 indicates that gas impermeable fuel cell plates are useful in the invention, also teaching the crosslinking of epoxy nitrile precursors by infrared radiation. Thus, it is the examiner's position that it

would have been prima facie obvious to include the noted limitations of patented claim 1 into patented claim 9 to form fuel cell plates having equally improved insulative properties.

4. Regarding claims 27-28, the claimed process teaches curing the coatings by infrared radiation. However, the claims do not teach the presently claimed cure time. It is the examiner's position that it would have been prima facie obvious to use the minimum cure time required to sufficiently cure the coating to reduce the time required for production.

5. Claim 26 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,730,363 B1 in view of Canfield.

6. Patented claim 1 applies as above for the process of sealing a fuel cell plate, failing to mention the application of the coating by screen printing. However, Canfield shows the conventionality of screen printing a gasket onto a fuel cell plate (Figure 6, col. 4 lines 40-51). It is the examiner's position that it would have been prima facie obvious to use a screen printing technique to apply the coating layer of patented claim 1 to provide a patterned discontinuous gasket layer having equally improved insulative properties.

7. Claims 30-31 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 29 of U.S. Patent No.

6,730,363 B1 in view of Pellegri et al. Pellegri et al. (US 4,197,178) can be found on the applicant's Form PTO-1449.

8. Patented claims 1 and 29 apply as above for an insulated fuel plate. However, the claims do not specify the thickness of the coating. Pellegri teaches plates for fuel cell applications having an insulative coating, teaching a coating thickness of 200 μm (example). It is the examiner's position that it would have been prima facie obvious to form the coating at any thickness necessary to balance cost and insulative properties of the coating.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pellegri et al. in view of Siebert. Siebert (US 4,025,578) can be found on the applicant's Form PTO-1449.

11. Pellegri teaches an improved bipolar separator for electrochemical cells, where the cells may be used in fuel cells (abstract; col. 1 lines 7-11). The separators are substantially impermeable to diffusion of hydrogen, are rigid and are protected from discharge of anionic species (col. 2 lines 33-38). The separator plates are made by

molding carbon, graphite, or metallic powder into a thermosetting resin (col. 2 lines 60-68). Insulating coatings for the separators include polyester, phenolic, furanic, and epoxide resins (col. 4 lines 44-53). The example shows a separator coated with a resin coating to a thickness of 200 μm, where the coating is cured with heat. Pellegri fails to teach a coating layer of less than about 150 μm thick. However, because of the insulative properties of the coating, it is the examiner's position that it would have been prima facie obvious to apply the coating at any thickness to balance cost and insulation properties of the cell structure.

12. Pellegri applies as above, failing to mention the use of infrared-curable sealant materials comprising epoxy resin and acrylontrile butadiene copolymer. Siebert teaches the use of compositions comprising epoxy resin, polybutadiene-acrylonitrile rubber, and an amine crosslinking agent (example 1), where the mixture is cast onto a substrate and thermally cured (col. 7 lines 33-50). The compositions can be used as castable gaskets, seals, and o-rings (col. 7 lines 51-57). It is the examiner's position that it would have been prima facie obvious to use the epoxy coatings of Siebert's invention as gaskets in Pellegri's invention, since the epoxy compositions of Siebert's invention are castable and hence more easily applied. Regarding the limitations to "polymerized or cross-linked in response to infrared radiation," it is the examiner's position that the cured coatings of the reference would be indistinguishable from those cured by infrared radiation. It is the examiner's position that the claimed cure process in this case would not provide a patentably distinct product.

13. Claims 25 and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pellegri et al. in view of Ying et al. Ying et al. (US 6,183,901) can be found on the applicant's Form PTO-1449.

14. Pellegri applies as above, failing to mention coatings cured by methods other than heating. Ying discloses a protective coating for separators in electrochemical cells, where a protective coating is applied to a microporous layer (abstract). The coating may be coated and cured by heat, UV light, visible light, infrared radiation, and electron beam radiation (col. 7 lines 48-55), and the separators may be used in fuel cell applications (col. 11 lines 9-15). Ying teaches combining an ethoxylated diacrylate with a urethane acrylate and a photosensitizer, coating the mixture at a thickness of 4 microns onto a substrate, and exposing the coating to UV lamps for 30 seconds to cure (example 1). The protective coatings enhance the flexibility and toughness of the separator (col. 13 lines 60-65). Therefore, it is the examiner's position that it would have been prima facie obvious to use the protective coatings of Ying's invention in Pellegri's electrochemical cells and to use any cure method necessary to improve the toughness of the separators.

15. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pellegri et al. in view of Ying et al. as applied to claims 25 and 27-28 above, and further in view of Canfield.

16. Pellegri and Ying apply as above for the process of sealing a fuel cell plate, failing to mention the application of the coating by screen printing.

However, Canfield shows the conventionality of screen printing a gasket onto a fuel cell plate (Figure 6, col. 4 lines 40-51). It is the examiner's position that it would have been prima facie obvious to use a screen printing technique to apply the gasket layer of Pellegri's and Ying's invention to provide a patterned discontinuous gasket layer having equally improved insulative properties.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie D. Bissett whose telephone number is (571) 272-1068. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MELANIE BISSETT
PATENT EXAMINER

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